

# De Courcy (Jas. O.)

*With compliments of the Author.*

## DISEASES OF THE ALIMENTARY CANAL —TREATMENT.

Read before the St. Clair Co., Ill., Medical  
Society, June 7, 1894.

## TREATMENT OF ACUTE AND CHRONIC ULCERS.

(Published by *Louisville Medical Monthly*,  
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Read before the twenty-first annual meeting of  
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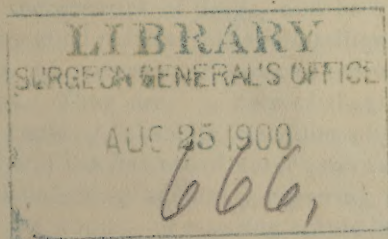
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BY

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## DISEASES OF THE ALIMENTARY CANAL— TREATMENT.

INTERNAL AND EXTERNAL HYDROTHERAPY.—MEDICATION.

By JAMES OSBORNE DE COURCY.

(Read before the St. Clair Co., Ill., Medical Society, June 7, 1894.)

Cleanliness is said to be next to godliness—a very old adage which I have found to be no less true in the treatment of all diseases which have come under my observation. It is my custom to first make clean my patient, outside and inside so far as practicable, by the free use of pure water and good soap. I have never seen or had a bad result from the use of these agents. I am of the opinion that in many cases all the medicine that is needed is the free, judicious use of water, abstinence from food, plenty of pure air and sunshine.

These agents, together with a clear conception and observation of the laws of hygiene will figure very conspicuously in the future of medicine.

While I am a strong advocate of the free use of water in the practice of medicine, I also have confidence in the therapeutics of drugs, and as I believe, have seen many good results from the intelligent use of them.

In the treatment of diseases there are three distinct steps. They are: 1, correct diagnosis—ascertaining the cause; 2, absolute cleanliness by irrigation internally and the free use of water externally, and by the use of disinfecting agents; 3, repairing the damage—healing the wound—or assisting nature in her work of reconstruction. This should be done by the skillful use of the tools best adapted to the work to be done.

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In treating diseases of the alimentary canal generally, and in the three following cases which I report to you I have endeavored to follow the foregoing principles. My results are all that could be desired. They have been both interesting and profitable to me, and I trust they may be of some interest to this society.

CASE 1.—Miss Mary; aged 29; American; Faun type; medium size and rather stout; was taken at night with pain in the lower bowels, followed by watery stools.

I was called in the early morning, March 15. Found her excited and suffering very much from pain in the bowels; also complained of severe headache. Temperature was slightly elevated. Pulse regular, but rapid and weak. She gave history of having had several severe attacks of ulcerative colitis, during one of which she came very near to death's door.

There was some tenderness on palpation and percussion over the major part of the abdomen and the bowel was very active in evacuating itself. The stools were thin, and contained mucus with a little blood. When food was taken into the stomach, especially milk, it was usually ejected in curdy masses within a few minutes.

The usual agents were used to abate the pain, to check the vomiting; also to restore the bowel to its normal condition.

The pain was greatly reduced and the rebellious condition of the stomach almost entirely overcome; but the bowel persisted in its active work of draining the system. The stools became offensive, containing more blood and mucus.

A portion of the lining membrane of the intestine about eight inches in length was passed with the feces the fourth day. Having a four ounce bottle of Glycozone, I concluded to try it. So other internal agents

were discontinued, and 2-drachm doses of Glycozone given every four hours in a wineglassful of water. The bowel was washed out morning and evening with warm soap water, followed by an ounce of tepid water containing an half drachm tinct. opium.

At the end of the first day after beginning the last method of treatment there were marked signs for the better; and the patient expressed herself as feeling less bad. The treatment was continued with constant improvement in the case until the Glycozone was all taken, at which time the bowel and stomach were under good control. Pain was all gone; and after a few days of convalescence the patient made a perfect recovery without any further treatment.

CASE 2.—Ely, aged 32, medium-size man, general health uniformly good; blacksmith by trade. First saw the case at 3 P. M., March 30.

On arrival at bedside of patient, I found him in what seemed to be a semi-comatose state. The odor of whiskey was very marked. Examination of the matter ejected showed it to contain blood and mucus.

A few drops of chloroform with cold water was given, and a cold pack placed over the epigastrium to check the vomiting. The following preparation was given to quiet the stomach and to move the bowel.

R Calomel, gr. viij.  
Podophyllum, gr. ij.  
Subnitrate of bismuth, gr. xij.  
Bicarbonate of soda, gr. iv.

M. Pulvis, No. 4. Sig. Dose, one powder every hour.

The father, mother and wife of the patient gave the following history:

“For the last five years the patient has been drinking whiskey, and for the last two years, in particular, he

has been drinking too much. Last October he had an attack somewhat like this, but recovered in about one week.

"His general health has always been good. He has been drinking too much every day for a week now—keeping his whiskey in the shop. He was well this morning. Worked in the shop until noon. Ate a hearty dinner, but was taken sick soon after eating and in a short time began to vomit."

Called again at 5 P. M. Found him quiet, but suffering. Left some Dover's powders to be given during the night if necessary.

At 2 A. M., March 31, was called again. Found him excited and suffering very much. Quick pulse and slight elevation of temperature. Gave him hypodermic injection:

R Morph. sulph., gr.  $\frac{1}{4}$ .

Atropin, gr. 1-150.

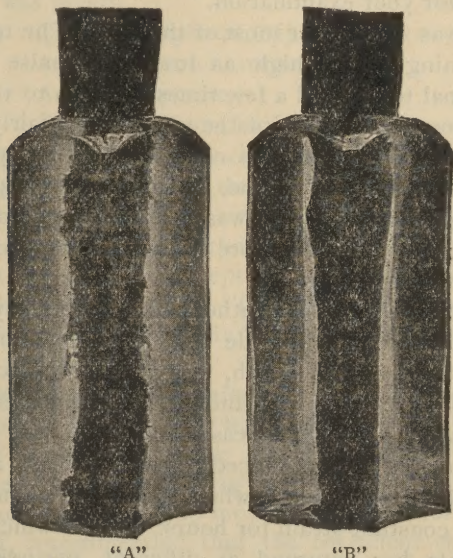
His wife gave history of his vomiting at irregular periods until 10 P. M., after which time nothing would pass either up or down. Impossible to swallow water. Upon careful inspection the whole mucous membrane lining the mouth and throat as far as could be seen was in a state of hypertrophy. Indeed, it was simply cooked. (Pardon the use of the word, cooked; but it expresses the condition.) The stomach, also, was in a state of inflammation. What was to be done?

Internal medication and alimentation was out of the question. Recognizing the emergency of the case, I determined, if possible, to dissolve the mucus about the affected parts, and to attempt to reduce the œdema of the membranes.

The nose and throat, therefore, were sprayed every twenty minutes for awhile with Hydrozone and a 20 per



cent. solution of the same used as a gargle every hour, until he could swallow water, which required forty hours. An enema of warm soap-water was given and repeated, which produced a soft stool; and he expressed himself as feeling better.



Photograph of the mucous membrane expelled from the esophagus of Ely. Cut "A" illustrates the ragged surface of the membrane as torn from the muscular coat of the tube.

Cut "B" illustrates the smooth surface of the same membrane over which food was passed, the membrane being turned inside out, just as when expelled. The size of these cuts is two-thirds that of the photograph of the esophagus. The cardiac end of the membrane being at the bottom of the cut in each case.

The spraying of nose and throat, together with the gargle, also the enema, were continued every day. The inability of the patient to swallow made alimentation by the stomach impossible, to say nothing of the incapacity of the stomach to perform the work of digestion. Boiled milk and warm soups were regularly given in small quantities per rectum.

On the morning of April 7 the whole lining membrane of the esophagus was expelled in the attempt to vomit. The membrane was neither broken nor perforated; but was turned inside out. I have preserved the specimen in an alcoholic solution; and take pleasure in presenting it herewith for your examination.

There was some fever most of the time. The temperature running up as high as 102. The pulse varied from normal to 90, and a few times went up to 100.

The general condition of the patient was fairly good—indeed, much better than could have been expected.

There was little headache, but a lancinating pain in the left hypogastric region was greatly accelerated by coughing; and there was more or less tendency to cough during the first week.

I might state here parenthetically that, in my judgment, the trouble in the side had no connection with the conditions of the mouth, throat and stomach; but on the contrary, was entirely and wholly independent of it.

The history given of the case showed the last named trouble to have been produced some five years ago by prolonged arduous labor in which the abdominal muscles were in a constant strain for hours. Since which time the trouble has returned at different periods; and almost invariably following protracted, or great straining of the muscles in that region. The treatment given was palliative.

The odor coming from the mouth of the patient was offensive from the first, and continued to grow more and more offensive until after the expulsion of the membrane.

The kidneys performed their work fairly well. The stools which followed the enema of warm water were rather soft and of a greenish color.



There were no hallucinations, no delirium; and for the most part sleep was good.

To prevent septicæmia, to assist nature in the work of reconstruction, as well as to counteract any miasmatic influence that might be present the following solution was given:

R Quininæ sulphatis,  $\mathfrak{D}$ ij.  
 Acidi sulphurici aromatici, 3 j.  
 Aquæ camphoræ,  
 Aquæ destillatæ, aa  $\mathfrak{z}$  ij.

M. Sig. One dessertspoonful every two hours, being alternated by half drachm doses of Hydrozone, 20 per cent. solution, given in a third of a glass of water.

Gradually, but slowly, the condition of the patient grew better, with the exception of one day, at which time he had no Hydrozone. The other medicine "Would not work without the gargle," as he expressed it; "But worked well together."

Immediately after resuming the use of Hydrozone he began to feel better. Saw him April 9th. Found him in good condition. Pulse and temperature normal. Expressed himself as feeling very well.

He had been sitting up most of the time for several days. I recommended that the treatment should be continued for some time.

A week later his wife called at my office stating that she thought he was doing very well. Since which time I have had no official report from the case.

My candid opinion is, that of all the agents used, the one to which he owes the preservation of his life during the first seven days of the attack, is Hydrozone.

CASE 3.—Bennie, little boy, age 9 years, orphan, German, was brought to my office May 20. Had diarrhœa which had become chronic. Also had intermittent fever—mild form. He was very much emaciated

Various and numerous agents from the list of ordinary remedies were used during the four succeeding days; but the diarrhœa was growing worse rather than better. The stools became very numerous, the actions amounting to ten or twelve at night with as many more during the day. The malarial fever received appropriate treatment and was readily subdued.

May 26 I planned a new treatment. The patient was thoroughly sponged from head to foot once a day with tepid alkaline water. The bowel was washed out *clean* morning and evening with soap-water, just warm enough to be comfortable to the patient. After the bowel was washed out, two ounces of starch-water containing two drachms of Glycozone was thrown into the rectum, and left to be absorbed. The internal treatment consisted of a milk diet, fresh water to drink, impregnated with Hydrozone, and dessertspoonful doses of Glycozone taken every two hours during the day in a wineglassful of fresh water.

Improvement began with this treatment. The skin and bowel was kept thoroughly cleansed every day as well as medicated, the bowel being irrigated twice each day. June 4, the child was reported well. His general health is rapidly improving.

What effected the cure? My answer is this:

1. Removing the cause. This was done by abstinence from all solid food. Aliment was restricted to small quantities of pure, fresh milk, beef and chicken soups, given at regular periods.

2. By cleansing the affected parts, as before stated.

3. By healing the wound. This was done by the use of Glycozone, which I have found to be one of the most reliable and rapidly-healing agents that I have yet used. The Hydrozone was used as a disinfecting agent.

May we not reasonably expect that during the remainder of the present decade, and for all time to come internal as well as external cleanliness will be to suffering humanity a boon—an heavenly unction?

NOTE.—I have, for some time, substituted Hydrozone in my practice instead of Peroxide of Hydrogen, as formerly used.

Hydrozone is “double strength” hydrogen peroxide—so to speak. In other words it has twice the bactericide power, and, therefore, requires only one-half the quantity to accomplish the same results.

It is not disagreeable to the patient when taken internally, if well diluted with pure fresh water.



## TREATMENT OF ACUTE AND CHRONIC ULCERS.

BY JAMES OSBORNE DECOURCY.

(Published by *Louisville Medical Monthly*, August, 1894.)

I have found no class of diseases yielding to treatment with greater reluctance than "old sores," or chronic ulcers. Recently, however, I have adopted a plan of treatment which is quite different from that laid down in the books, and my results have been much better.

Almost without exception, internal, or constitutional, as well as local treatment, is necessary.

The internal treatment should be directed to the seat of the malady, thus eradicating the general pathological condition, eliminating the poisons and disease germs from the system.

To accomplish this object, absolute cleanliness (internal and external), plenty of pure air and sunshine, the religious observance of the laws of hygiene, and a wholesome nutritious diet, are more useful and restorative in many instances than are drugs. All the secretory organs of the body should be required to perform, as nearly as possible, their natural amount of work.

This once accomplished, and all nature's machinery kept lubricated and in good working order, the local treatment and work of reconstruction will be comparatively easy.

The sores must be kept clean. This is done very satisfactorily by the application of hot water. If the

parts can not be soaked in the hot water, an ordinary fountain syringe can be filled with water (as hot as can be borne, without burning), elevated high enough to give sufficient velocity to the stream which is played over the parts, by the operator holding the nozzle of the syringe a short distance from the seat of the application. The frequency of the washing will depend upon the nature of the case, but should be repeated as often as necessary to keep it clean and free from offensive odors.

To destroy pus and bacteria, and to aid nature in the work of rebuilding the parts invaded, I have found Hydrozone and Glycozone superior to any and all other agents tried.

Hydrozone is first applied (after the hot water) by the use of an ordinary glass dropper, or hard rubber syringe, slowly, all over the ulcer, until the pus is destroyed. Chemical action with ebullition immediately follows and continues until the enemy is quite dead, but no longer. One layer of absorbent cotton is saturated with Glycozone and placed smoothly over the parts, and held in place by a cotton bandage, sufficiently tight to hold the cotton in place.

Other local medication might do as well in some cases, but I have not so found it. The result obtained in the case I report herewith seems to confirm the statement as above made.

Edw. K., aged twenty-three. American, but German descent. A farmer by occupation; unmarried. Rather small in stature, but well-built. Having taken sixteen bottles of "Blood purifier" and a lot of "Anti-constipation pills" within the last eight months for "Falling sickness," came to my office March 19th, with both legs most frightfully ulcerated, from knees to ankles, with

considerable discharge of pus from various parts of the legs. Such a case should have been sent to a hospital or sanitarium, for the best systematic treatment obtainable; but, unfortunately, he was so situated that he could not be sent to such a place. In a most pleading way, he asked me if I could do him any good. I told him I thought so, if he would mind me, and take the treatment that I would advise. He promised, and the treatment was begun.

The legs were cleansed by soaking them for twenty minutes in hot water twice a day, after which Hydrozone was used freely all over the sores, to destroy the pus, the pustules having been opened, and as much pus evacuated as possible.

After this application, morning and evening, the legs were powdered all over the affected portion with a mixture of equal parts of alum, boric acid and aristol, then covered with absorbent cotton, and bound up with an ordinary cotton gauze bandage.

This local treatment was kept up for two weeks. The improvement was slow, but constant. The process of healing advanced from the knees downward, and from the ankles upward, leaving the last part to heal about the middle of the leg, where the ulceration formed a thick crust, extending two-thirds around each leg.

The constant discharge of pus from the sores caused the dressing to stick to the parts, which could not be removed without difficulty.

The alum, boric acid and aristol powder was discontinued, and Glycozone used as a reconstructive agent, from the end of the second week. The sores were washed and the Hydrozone used as before mentioned, then the Glycozone was applied to the whole affected parts. A layer of absorbent cotton was saturated with



Glycozone, and smoothly placed around the sores, and held in place by a cotton bandage.

There was no further trouble about the bandage adhering to the sore. The granulation was much more rapid than at first. At the end of the second week after Hydrozone and Glycozone were used as the sole local agents, the young man said he was well and worked every day from that time.

The internal treatment was changed from time to time as the case required. Opiates were given several times during the first two weeks of the treatment, to ameliorate the pain, which was very great at times. He was much emaciated and melancholy when he first came to me. His bowels would not move without cathartics.

Fluid extract of *nux vomica* was given morning and noon, seven drops before each meal. Elixir lactopeptin, with bismuth, was given in drachm doses after each meal, and, occasionally laxatives at night. Later on, tincture chloride of iron was given, in ten drop doses, after each meal, for one week.

After the third week no internal treatment was given, as the patient was in good condition, and cheerful.

Hydrozone and Glycozone were left to complete the structure, and place upon it the capstone of a beautiful new integument, which they did in a way gratifying both to the patient and to myself.

The following cuts illustrate a case of extensive ulcer resulting from Anthrax, before and after treatment with Hydrozone and Glycozone.



The above picture is taken from a photograph of Mrs. H. B., 72 years old. It was made July 26, 1895.

This case reported by me before the Illinois State Medical Society in 1896; published in the *New York Polyclinic* for August, 1897.



The above picture is taken from a photograph of the patient, made November 1, 1895.

## MALIGNANT SORE THROAT AND ITS TREATMENT.

BY JAMES OSBORNE DE COURCY.

Read before the twenty-first annual meeting of the Southern Illinois  
Medical Association, held at Carbondale, Ill.,  
May 9 and 10, 1895.

(Published by the *Courier of Medicine*, for July and August Issues.)

It is in compliance with special request from your distinguished president that the author ventures to add a word upon a subject which for several months past has received more scientific thought, perhaps, than any other one subject which concerns the profession from a pathologico-scientific standpoint. There are various forms of sore throat which may be called malignant; but the attention of this Association is directed by this paper to that acute, specific, contagious disease, beginning by an infection of the throat, characterized by local exudation, glandular enlargements, systemic poisoning, and having various paralyses for its sequelæ. The technical name by which it is generally called (derived, as it is, from the Greek *diphthera*, leather, and *dipho*, soften) at once portrays the peculiar nature of the pathological condition, and when the soft, leathery-like membrane has been formed and observed by the physician, a picture that cannot be erased is engraved on his mind. This malady has ever been a terror to the faculty, as well as to the laity, whenever and wherever it has made its appearance. Since the profession has had so much literature upon this subject from so many different standpoints, through the medical press during the past year, it seems that any lengthy scientific exegesis of the subject at this time could scarcely be expected.



The more salient points, therefore, will be touched, some personal observations given along the line, the gate set ajar, that the members present may enter the field, unveil the *materies morbi*, and discuss their *modus operandi*, *ad libitum*. As to the cause of the disease the opinions of authors and pathologists of eminence have been at variance, and may yet be said to be divergent. Hueter, Oertel and Virchow were among the first to advance the opinion that micrococci produce the pathological condition, and, therefore, comprise the primary cause of the disease. On the other hand, in concord with various dissenting voices, by certain filtration experiments made by Burdon-Sanderson, serious doubts were cast on micrococci as the immediate agency; but they are found to be necessary from either standpoint, and a secondary role named by the experimenter as being consequent upon their functional activity. More recently it has been scientifically demonstrated by a number of German pathologists, to the satisfaction of a portion of the profession, that this belongs to the list of bacteriological diseases.

The reasons and demonstrations set forth to establish the germ theory, so far as this disease is concerned—to the author, at least—seem conclusive; other opinions, possibly that of some of you, to the contrary notwithstanding. In regard to the contagious infectious nature, the sporadic, endemic and epidemic prevalence of the disease, it is scarcely necessary to make mention; neither its seeming alliance with scarlet fever, nor yet of its simultaneous appearance during epidemics of small-pox, measles, puerperal and typhus fevers. The contagion in the poisonous exudations and secretions of the fauces is, without doubt, the chief cause of its spread. The author believes the variation in the

period of incubation to be due to several causes, among which may be mentioned the physiological, or pathological condition, the age and surroundings of those exposed to and infected by the germs. From the standpoint of pathological anatomy, the first perceptible change is the injection of the mucous membrane of the fauces, quickly followed by hyperæmia of the tonsils. At the end of thirty hours or so a grayish pellicle appears on the tongue, and soon is visible elsewhere on the soft palate, uvula or tonsils. At first these patches are thin and scattered, but in a very short time coalesce. Very soon the army of micrococci marshal their forces and press their way through the mucous membrane at whatever point may be the least strongly fortified. At and around this point the forces assemble as they pass through the broken wall, and at once proceed to throw up a very singular fortification—the false membrane. The constituent parts of this membrane, its office, extension into the nares and air passages, its various changes, together with the special forms of the disease, are intentionally omitted, with the hope that the more important points may be brought out by the discussion. Little opportunity is offered the general practitioner, outside of hospitals, for accurate observations of the inroads made by the disease on the various organs of the body.

*Symptomatology.*—In the mild or catarrhal form, the symptoms are similar to those of acute pharyngitis, or tonsillitis: soreness, pain and irritation are felt in the throat, especially on attempting to swallow, and general malaise may follow. In other subjects of a nervous excitability; or those who are laboring under some pathological condition at the time infected, the symptoms may be much more severe. Nausea and vomiting

may follow, marked headache, fever and sore throat. On ocular examination the tonsils are found œdematous, the mucous membrane of the fauces infiltrated, and membranous patches are present. So great may be the œdema of the tonsils that a fatal climax may be reached before the false membrane is produced. A thick white coating soon covers the tongue. In two or three days the false membrane appears in one or more places, spreading over a considerable space in a few hours. The membrane, at first thin, constantly grows thicker the longer it remains undisturbed. The color, at first a creamy yellow or a grayish white, gradually changes to a dark red as the disease advances. About the fifth day the disease may take on the more severe form and violent symptoms follow, the temperature rising to  $103^{\circ}$  to  $105^{\circ}$  Fahrenheit. The soreness on attempting to swallow is very acute, and in a few hours the membrane appears either on the palate, uvula or tonsils. In removing the tenacious membrane the mucus is peeled off with it and a raw surface left through which the blood percolates. Should no attempt be made to remove the false membrane and to arrest its reproduction it will spread rapidly, passing up the nares and down the tubes penetrating the air passage. Thus the blood constantly taking on poisons from the debris of the fungous, the whole system is saturated with the infection, and a septic, or even gangrenous condition produced. Possibly this condition of things may be spared by earlier termination of the case, by spasm of the glottis, occlusion of the bronchi, pneumonia or carbonic acid gas poisoning. It is during the septicæmic stage that the membranes take on the darker color, that the odor from the breath and discharges becomes foul and offensive. At this time, as a rule, there is but little elevation of temperature, if



any at all; slow and irregular pulse. Next gangrene sets up, and a fatal termination ushered in by paralysis of the heart. Numerous are the causes which influence the behavior, course, duration and termination of malignant sore throat. The mortality is great, though no precise statement of mortality rates has yet been made. The prognosis should be very guarded, and is usually grave; is augmented the more virulent the case from which the infection was obtained. For obvious reasons, the mortality is greatest in infants and young children. Good nursing has a decided influence upon the course of the disease, and should always be considered in estimating possible results. Extension into the nares and larynx is an alarming symptom; likewise bleeding, vomiting, purging, low temperature, cold and clammy skin and slow and intermitting pulse are premonitors of evil.

Cases apparently favorable have suddenly ended by paralysis of the heart. As regards the hopefulness of recovery from the various forms of this disease, the catarrhal stands first, the croupous second and lastly the septic or gangrenous.

Paralyses of various parts and organs of the body are prominent among the sequelæ which often follow the ravages of this disease. It may come on at once, be delayed for several days, or even some weeks. Fortunately, however, this paralysis is quite amenable to treatment. It is hoped that the discussion will bring out the pathological condition thus produced upon the nervous system, organs of circulation and respiration. To make a prompt and positive diagnosis in all cases is a most difficult task. At present eminent authorities in bacteriology teach that the only actual scientific diagnosis that can be made is by use of the culture fluid or microscope. A portion of the suspected exudate is

immersed in the Klebs-Löffler fluid, which is furnished in sealed glass tubes. After the fluid has been inoculated it is set away in a warm, dark place (98.6° Fahrenheit is about the required temperature) for the space of twelve or eighteen hours. If the micrococci of diphtheria are present they will by that time have produced a growth in the fluid which will be perceptible to the unaided eye. This method is not accepted by all. The microscope is regarded as the most accurate method by which to make a scientific diagnosis. The author has never yet seen two cases that were exactly alike, either in symptoms or in the local manifestations. Before the false membrane has been formed it is easy to confound the catarrhal variety with acute follicular ulceration of the tonsils, or amygdalitis, owing principally, in the last case to the intense œdema of the tonsils. Especially is this true when there are no other cases of the malady in the neighborhood, and when, so far as known, the patient has not been exposed to the contagion from any source. That it has been confounded with croup there is little room for reasonable doubt.

Since croup is simply a local affection, non-contagious and not infectious, is without the characteristic general symptoms of malignant sore throat; for these reasons the non-identity of the two diseases seems perfectly patent. There is some analogy between malignant and scarlatinal sore throat, but the whole mucous membrane of the fauces is intensely red in scarlet fever, while in malignant sore throat the redness is limited to the infected area; in scarlet fever the exudation is soft like curds, and usually scattered over both tonsils and the palate. In malignant sore throat the membrane begins at one point (sometimes more), adheres closely to the epithelium, and has a characteristic color. In scarla-

tina the symptoms are much more severe; high fever, with vomiting, delirium, or convulsions, commonly inaugurate the disease, which are wanting in malignant sore throat. At the expiration of twenty-four hours the rash appears in scarlatina, but is absent in malignant sore throat.

*Treatment.*—Believing that local infection is the true cause of the disease, the following treatment is suggested, being based upon the validity of the germ theory. Rational treatment necessarily resolves itself into two distinct divisions: preventive and active therapeutics. In every case where preventive medicine is timely, faithfully and scientifically applied, the mortality should be zero. Unfortunately, however, this mode of treatment is at present impracticable in very many cases. In the application of preventive measures, the establishment and maintenance of normal physiological condition is of primary import.

Abundance of sunshine, the greatest of all purifying agents and germicides; good hygienic surroundings, absolute cleanliness indoors and out, internal and external, are axioms, so to speak, which should form the basis of treatment in all cases. When the disease has appeared in any locality the whole population should be informed at the earliest possible moment, so that suitable precautionary steps may be taken to suppress the outbreak. The mouths and throats of all children who are under fifteen years of age and living in the infected district should be carefully examined from day to day.

Mouth washes, gargles and sprays of trustworthy germicide agents, should be freely used in every family where there are children, and especially among the young children, as well as all those who may be exposed to the poison. There are many germicides in active use,

but the author has obtained the most satisfactory results from the use of **Hydrozone**. No ill effects are consequent upon the extensive use of **Hydrozone**; and when diluted can be given internally to the new-born infant. Immunity of children produced by the new and very popular agent, antitoxic serum, before, or at least as soon as exposed to the infection; is already regarded by some as the best known preventive and active treatment. There are many things which conspire to influence the active treatment—the age of the patient, his physiological or pathological condition at the time he is infected, the length of time the poison has been in the system when the physician first sees the case, the particular form of the disease and the general surroundings of the patient are all to be noted, and are worthy of careful consideration. The earlier the disease is recognized and the sooner the treatment is begun the better will it be for all concerned, and the greater the chances for recovery. As venom by the sharp fang implanted beneath the skin quickly ramifies every part of the living organism, producing general toxic effects, so it is in this disease; the infection from a single spot migrates into every nook and corner of the system. For complications that may arise during the course of special cases no prescribed plan of treatment would apply. The physician in charge is at the helm; wisdom and good judgment must be brought into play as compass and needle to direct him in the skillful management of the case, so that, as the vessel advances through the tempest, the rocks and sand-bars lying concealed along the way may be avoided. Solutions of silver nitrate, iron chloride tr., perchloride and glycerine, acids (salicylic and carbolic), potash chlorate, borax, etc., have been in use as local applications for a long time; but some of



them are dangerous and the author does not use them. He has found nothing superior to **Hydrozone**. It accomplishes all the good that can be obtained from any local application, routs the enemies from their strongholds, kills the invaders and destroys their fortifications. It is quite safe and free from all untoward after-effects which often follow the use of some of the other therapeutic agents; can be used in full strength, or diluted, as a spray, gargle, taken internally, or used on cotton probang to mop up the "*beasts*." It should be used every hour, day and night, until the false membrane ceases to be reproduced, and every particle of the membrane destroyed at each seance. If the fungous be removed early and kept removed hourly it is very quickly destroyed by **Hydrozone**, when applied in full strength. When the growth extends into the nares diluted **Hydrozone** should be sniffed up the nose, or the nasal douche and spray thoroughly and frequently used.

After the poison has become general the systemic treatment is quite as important as the local. The treatment should be directed against the malady from a double standpoint, to limit spreading of the local disease and to prevent, as far as possible, systemic infection. Ammonia bromide, iodine (used singly and combined), iodine comp. liqr. and acid carbolic, quinine and alcohol have been extensively used as constitutional antidotes to the poison of malignant sore throat. Since the appearance of antitoxic serum in therapeutics the mortality of this disease has been so much reduced in the various hospitals and infirmaries where it has been used, it has supplanted other agents or reduced them to places of subordination, at least for the time being.

The author's experience with antitoxin is quite limited, having used it in three cases only; but in each case the

results were all that could have been expected by the most sanguine. The results following its use, as reported by the institutions and physicians who have experimented with it are very gratifying; and unless "it is possible that the very elect are deceived" the antitoxic serum therapy is a success. The immunizing dose is from c. c. i. to c. c. vii, depending upon the age and condition of the patient. The medicinal dose is from c. c. v. to c. c. xxv, given at one injection, repeated one or more times should it be deemed necessary. The earlier the injection is given the less will be the quantity of serum required in any given case. Stimulants and quinine may perform beneficial functions, but nourishing aliments are necessary from the beginning. Beef essence, eggs, egg-nog, pure milk and malted milk are suitable articles of food for diet. They can be changed and interchanged from time to time throughout the course of the disease. Nourishment should be given at short intervals in order, if possible, to prevent collapse.

It is scarcely necessary to add that every precaution should be taken by physicians and nurses to ward off infection. The clothes of the patient and nurses, the bed, bedding, furniture, and apartments occupied, should be thoroughly disinfected. The judicious use of quinine, iron, strychnine and electricity will generally subdue paralysis that may follow or result from an attack of malignant sore throat.



